

Proposed Control Measure for In-Use Stationary Diesel Agricultural Engines

What is an in-use stationary diesel agricultural engine?

An in-use stationary diesel agricultural engine (also referred to as in-use ag. engine) is a diesel-fueled engine located at a fixed site for the purposes of growing crops or raising fowl or other animals. An estimated 9,000 to 11,000 of these engines are currently operated in California, primarily in the Central Valley. Most are used to power irrigation pumps. They may also be used to power agricultural wind machines and to generate power for other agricultural purposes during electrical power failures or in remote locations.

What are the emissions and health impacts associated with in-use ag. engines?

California's in-use ag. engines emit diesel particulate matter (PM) and oxides of nitrogen (NOx) that cause adverse health effects for Californians. Stationary irrigation pump engines, alone, emit an estimated 700 to 800 tons of diesel PM and 10,000 to 12,000 tons of NOx annually. Most of these emissions occur during the summer growing season.

The California Air Resources Board (ARB) identified diesel PM as a toxic air contaminant (TAC) in 1998. Exposure to diesel PM may result in both cancer and noncancer health effects. Noncancer health effects may include eye and lung irritation, allergic reactions in the lungs, asthma exacerbation, blood toxicity, immune system dysfunction, and developmental disorders. NOx, a contributor to ozone or smog, has also been shown to have adverse health effects in humans including respiratory irritation, suppression of the immune system, and asthma exacerbation.

Are there existing control measures for in-use ag. engines?

Yes, the San Joaquin Valley (Rule 4702) and South Coast (Rule 1110.2) air districts limit NOx, volatile organic compound (VOC) and carbon monoxide (CO) emissions from in-use ag. and other engines. In the future, other local air districts may adopt control requirements for in-use ag. engines.

Is ARB proposing a control measure for in-use ag. engines?

Yes, ARB staff is proposing to amend the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines to add PM emission limits and other requirements for in-use ag. engines. Currently, the ATCM regulates *new* ag. engines (<http://www.arb.ca.gov/regact/statde/statde.htm>). Owners or operators of greater than 50 horsepower in-use ag. engines subject to San Joaquin Valley or South Coast air district NOx rules are also expected to comply with ARB's proposed PM measure, when adopted.

What does the proposed control measure require?

ARB staff is proposing emission limits for in-use ag. engines greater than 50 hp. These limits would require uncontrolled (primarily pre-1996) engines not to exceed Tier 3 or Tier 4 new Off-Road Compression Ignition Engine Certification Standards for PM by the 2011-2012 timeframe. Tier 1 and Tier 2 engines could not exceed Tier 4 certification standards for PM by the 2015-2016 timeframe, or 12 years after initial installation, whichever is later. ARB staff is considering more stringent PM emission limits for an in-use ag. engine or engines located near a neighboring residence or group of residences (e.g., within 1,000 feet).

In addition, ARB staff is proposing other air pollutant emission limits and reporting requirements. Agricultural wind machines and emergency standby generator sets would be exempt from the proposed emission limits. The proposal is subject to change during the regulatory review and adoption process.

Who would be affected by the proposed control measure?

California farmers, ranchers, and universities or other institutions with programs operating stationary diesel agricultural engines would be affected by the proposed control measure. In addition, the proposed control measure could have indirect impacts on electric power providers, fuel suppliers, and engine manufacturers, dealers, and rental agencies.

What are potential compliance options for the proposed measure?

Potential compliance options for the proposed control measure's emission limits include: engine replacement with an electric motor, spark-ignited engine, or compliant diesel engine; engine retrofit with add-on control devices; or the use of natural gas, propane, verified biodiesel, or other alternative fuels. However, engine replacement with an electric motor or new, cleaner diesel engine is expected to be the primary means of compliance for technical, financial, and emission reduction reasons.

****Contact your local air district to discuss the most appropriate and cost-effective compliance option for your in-use ag. engine or engines.****

Is funding available to meet the requirements in the proposed control measure?

Some compliance options may be eligible for incentive funds or special rates. The following links provide information on specific programs:

Pacific Gas & Electric at <http://www.pge.com/agice>.

Southern California Edison at <http://www.sce.com/rebatesandsavings/largebusiness/agricultural/tou-pa-ice.htm>.

Environmental Quality Incentives Program at <http://www.ca.nrcs.usda.gov/programs/eqip>.

Carl Moyer Program or Agricultural Assistance Program at <http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm> and <http://www.arb.ca.gov/msprog/moyer/contacts.htm>.

Contact the program provider and your local air district for information about eligibility and application submittal as soon as possible.

For more information or to participate in the development of this control measure:

The Board is tentatively scheduled to consider adoption of the proposed control measure in October 2006. Additional information and a copy of the complete proposal (see Tables 6 and 7 for a summary of the proposed emission limits for in-use stationary diesel agricultural engines) are available at <http://www.arb.ca.gov/diesel/ag/inuseag.htm>. To be notified of meetings, workshops, publications, and hearings regarding the proposed control measure, please join the electronic list serve at <http://www.arb.ca.gov/listserv/inuseag.htm>. You may also contact Richard Boyd at (916) 322-8285, rboyd@arb.ca.gov, or, Barbara Cook at (916) 323-0440, bcook@arb.ca.gov.